New Patent Claims

1. A head up display with a device for producing a focused light flux, having a light source consisting of a light emitting diode matrix (1, 2, 3), having an optical device for focusing and scattering the light produced by the light emitting diodes and which is arranged between the light source and a light exit opening (9, 18), in which the device for focusing and scattering comprises a grid reflector (5) that respectively forms a light channel for a matrix point whose walls (6) are reflecting, and whose end of in each case one light channel that faces the light source (1, 2, 3) includes a positive lens (4), and having an image reproduction apparatus (9) that includes light valves and is arranged at the light exit opening (9, 18) of the device for focusing and scattering, a diffusing screen (10) being arranged between the image reproduction apparatus (9) and the light exit opening (9, 18).

2. The head up display as claimed in claim 1, characterized in that the positive lenses (4) of all the light channels are integrally connected to a plate arranged between the light source (1, 2, 3) and the grid reflector (5).

3. The head up display as claimed in claim 1, characterized in that the positive lenses (4) are integrally connected in groups to webs arranged between the light source (1, 2, 3) and the grid reflector (5).

4. The head up display as claimed in one of the preceding claims, characterized in that the radii of curvature of the lens differ in different directions (astigmatic lenses).

5. The head up display as claimed in one of the preceding claims, characterized in that the image reproduction apparatus (9) has an oblique position such that the incident light is not reflected in the same direction in which the light also leaves the image reproduction apparatus (9) in order to reach the viewer.